

# Artists Using Science and Technology

n e w s l e t t e r

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Mar/Apr

from the editor

THIS ISSUE IS DEVOTED TO NANOTECHNOLOGY, THE NEW TECHNOLOGY ON THE HORIZON, AND ITS IMPACT ON THE ARTS. WE ARE CURRENTLY IN THE MICRON REVOLUTION (I.E. SILICON CHIPS, ETC.) BUT THIS WILL CHANGE EARLY IN THE NEXT DECADE TO NANO-TECHNOLOGY.

WHAT WILL THIS MEAN FOR THE ARTS? I HOPE THIS SELECTION OF ARTICLES WILL GIVE AN IDEA OF THE COMING CHANGES AND INSPIRE YOU TO LEARN MORE ABOUT THIS FIELD AND ADD IT TO YOUR CREATIVE VISION!

ALEXA SMITH

## What is nanotechnology?

Basically, picture building items like using Lego blocks but at the atomic level. It is the precise control of matter, rather than the way manufacturing is currently done by etching or "top-down" approach. Nanotechnology is a "bottom-up" approach where you precisely place atoms to create items, resulting in no waste and materials with special properties.

The following are sources for additional information on nanotechnology:

### Books (Non-Technical)

• ~~Forecasting the Future~~ by K. Drexler and C. Peterson, William Morrow and Company, 1991. This book is out of print but I believe The Foresight Institute (listed below) still has copies for sale.

• ~~Nanotechnology: Molecular Simulations on Global Architecture~~ by B.C.

Crandall, MIT Press, 1996. Currently in print and available at bookstores.

### Newsgroup on the Internet

sci.nanotech

### Web Sites

Nanothinc

<http://www.nanothinc.com>

Foresight Institute

<http://www.foresight.org>

Xerox PARC

<http://www.xerox.com/nano>

NanoLink

<http://sunsite.nus.sg/MEMEX/nanolink.html>

(This site has a more complete list of nano sites on the web)

## TELEPRESENCE

WEDNESDAY, MARCH 12, 7:30 PM

MCBEAN THEATER, EXPLORATORIUM,

3601 LYON ST., SAN FRANCISCO

CONTACT: TRUDY MYRRH REAGAN 415-856-9593

The aim of telepresence art is to create the means to exercise virtual control or feel the essence of a remote location. It is the fascination of action at a distance, something even a small child feels when it waves to catch our attention.

San Francisco artists **Joel Slayton** and **Steve Wilson** will familiarize the audience with the emerging field of telepresence. They will describe past projects of robot control, discuss principals useful in designing art installations and events using this technology, and demonstrate a *live* prototype control event (conditions permitting).

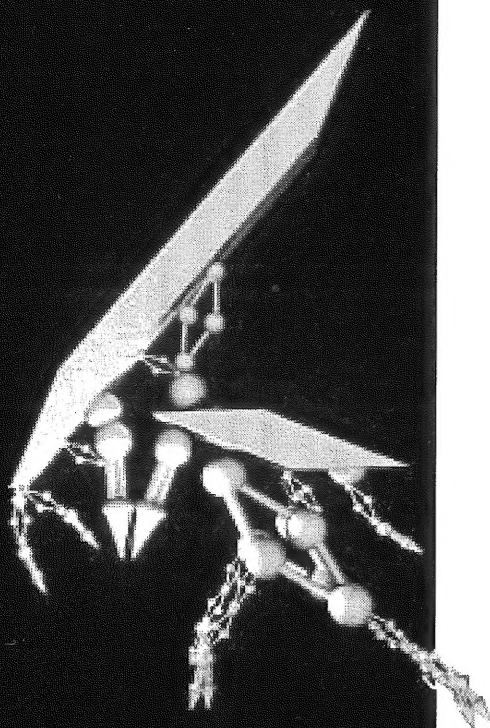
**Joel Slayton** is Professor of Art at San Jose State University and Director of the CADRE Institute. CADRE is an interdisciplinary academic and research program dedicated to exploration of digital media technology. Joel Slayton's art works have been exhibited internationally.

**Stephen Wilson** is professor of Conceptual Design/Information Arts, San Francisco State University. He is an artist, author and professor who explores the implications of emerging technologies.

As always, the forum is free, though donations are appreciated. It is open to the public and wheelchair accessible.

Our thanks to the Exploratorium for hosting the Ylem Forum since 1988, and its staff physicist, **Larry Shaw**, for technical support!

A number of Ylem members were featured in the *Digital Salon* held by NYC/SIGGRAPH and documented in the November issue of *Leonardo*: **Barbara Nessim** was one of the jurors. Exhibiting were: **Victor Acevedo**, **Sonya Rapoport**, **Peter Terezakis**, **Joan Truckenbrod**, **Anna Ursyn**, **Roman Verostko** and **Corinne Whitaker**. **Dave Krzysik** is helping Tom Kennedy and Ripper, the Friendly Shark, obtain bicycles for Bosnia. Ripper is a shark-shaped art car that travels from city to city to publicize this project. (Anyone having a bike to donate can call Dave at International Media, 415-273-1545)....**Bob Gelman** and **Bruce Tobin** were instrumental in putting on the *Digital Be-In* during MacWorld in San Francisco in January...Digital works by **Diane Fenster** and large acrylic paintings by her husband, Miles Stryker, explored psychological themes at Gallery 16 in San Francisco in December...**Patricia Tavenner** curated The First International Female Artistamp <sup>2</sup> Exhibition featuring artist's stamps by 100 women, including **Eleanor Kent** this winter at the Stamp Art Gallery in San Francisco....Other recent group shows featuring Ylem artists: **Gene R. Edwards** at the Stage Gallery in Merrick, New York...**Flash Light** at the Tomasulo Gallery, Cranford, NJ...In publications, **Daniel Kottke** and his *Cyberlights* made the cover of *Computer Currents* in December, and *Artweek* featured **Diane Fenster** and **Lucia Grossberger Morales** in its art and technology issue in February. **Myrrh** is having two concurrent solo shows in Palo Alto community buildings, one featuring her work with science images, and one of her works from 1970 to the present on political and social issues. Our on-line gallery *ART ON THE EDGE* was just awarded two more awards. A Five-Star winner award from *Luckman Interactive* at, <http://www.luckman.com> and inclusion of "Our awesome art gallery" to *Interstat* the ultimate guide to SF/fantasy and surreal art at: <http://home.interstat.net/~slawcio/artsf.html>



*"A microfactory would be better able to create nanomanipulators than could a regular macrofactory. Instruments made in microfactories would be much more precise than what we can manufacture today."*

Excerpt from *The Final Edition*, K. Metaverso, accessible

*"Accepting the responsibility of a socio-technocracy will begin resolution."*

agentk@grfn.org

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I create images of nano-robots, and possible molecular structures, as a focused part of a much larger collection of images concerning the future and technology. In order to better recreate the mental image; the majority of my schooling has comprised digital image generation and reproduction. Currently I have been involved in creating a multi-media web publishing company which is comprised of disabled, displaced, and homeless individuals. Our tentative name is web@ccess. The concept is a non-profit company which assists outsiders to create multi - media files for businesses and other non-profits. We also provide images and concepts, web page design, HTML, digital photography, art direction, scripting, image processing, photo manipulation and retouching, and 2D and 3D rendering. Our group is discussing providing electronic security and cryptography; as we have talents in those areas, also. I would like to work with other professionals on the creation of virtual reality modules for inter-active production, model-making, learning, and molecular manipulators or related simulations. My related projects are Torus, an inter-active HyperCard book about the possibilities of other intelligences, and social engineering. Also, the short animation, Virtual Reality as an Imaging System for Nano-tech Based Manufacturing Process.

by Kurt Kohl



# THE PATH TO NANO-IMMERSAL

## BY KURT KOHL

The computer simulations were executed by STELLA and DYNAMO, Artificial Intelligences. The government has also acquired nano-technology: site-specific placement of lab-created molecules in a device of nanometer proportions. These devices use re-agent catalysts as an engine and folding proteins as armatures or grippers. The mass replication of commodity items could free the masses from poverty or at least work. However, our Venusian invader-occupied, one-world government, has suppressed this acquired technology.

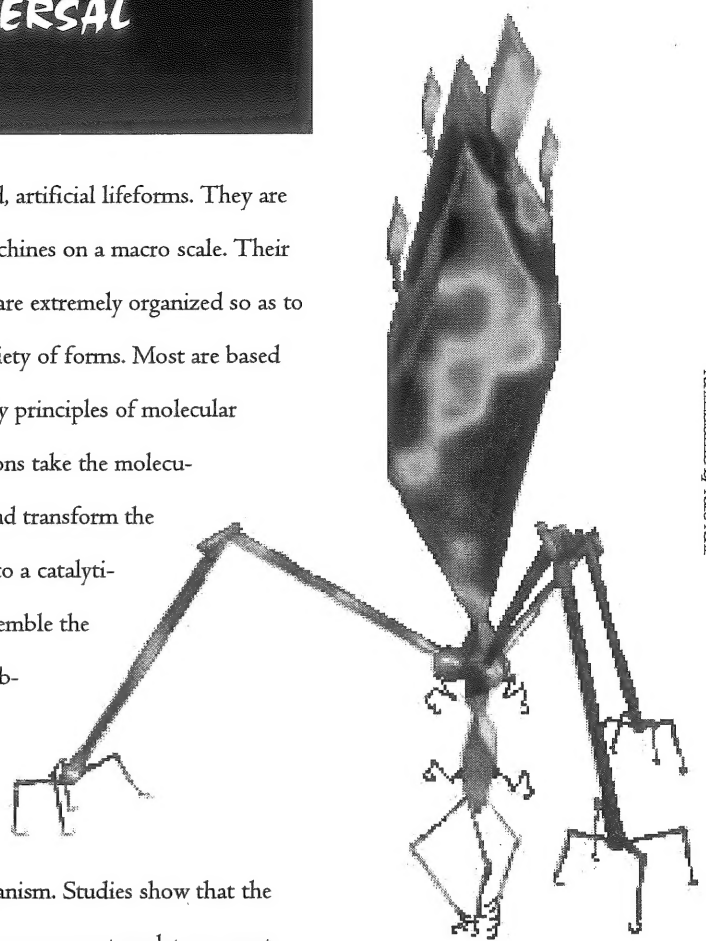
I think it would take ingenuity and intent to create a robust replicator. The ones we design initially will only work in their Nano-fabrication units, using software which is very unlikely to have mutation-free failure modes.

Advances in smart materials processing have made it possible to produce diamondoid films or coatings on a variety of substrates, including metals and ceramics. These coatings are characterized by high hardness and tensile strength, high electrical resistivity, high thermal conductivity, and high resistance against chemical abrasion and against sputtering by a variety of plasma species.

By order of The Central Brain, in the near future, everything will be assimilated into a nano-technological data-base. This action is for utilitarian functions only. We must fight this. The

"V" are nano-based, artificial lifeforms. They are nano-molecular machines on a macro scale. Their schematic patterns are extremely organized so as to replicate a wide variety of forms. Most are based upon the elementary principles of molecular cloning. The Operons take the molecular sequence data and transform the cloned fragment into a catalytic promoter to assemble the sub-units. These sub-units are chemical constructions of the nucleotide-edited, original organism. Studies show that the aboriginal molecular sequence template was not amino-acid based. The "V" could very well be based on a metabolism which uses sulfur and other compounds, such as are found on Venus. The gene-coding is an attempt to re-sequence a symbiont which can function in a variety of environments. The temperatures of these new environments are considerably colder than the Venusian surface, 2,600 Fahrenheit.

Operation Find The Remote is the virtual medium to create and control the nano-based manipulators. It is a template for atomic arraignment of complex devices. The Stolen UFO Technology Corporation has yielded smart-composite materials to neutralize the Venusian implants that are left in the sinuses of abductees.



VeneticLife by Kurt Kohl

INTERFACE 235 from:

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Martian Sleep Temple excerpt,  
Theyxist, at:

•[http://www.macatawa.org/~agentk/theylive\\_theyexist.html](http://www.macatawa.org/~agentk/theylive_theyexist.html)  
e-mail: [agentk@grfn.org](mailto:agentk@grfn.org)

Kurt Kohl

Web@ccess/, UFO Museum,  
115 Cambridge, Pleasant Ridge,  
MI 48069 or,

•<http://www.grfn.org/~eric/access.htm> or,  
•<http://www.nanothinc.com/NanoWorld/NanoGallery/gallery.html>

v-mail: (810) 545-0477

e-mail: [agentk@grfn.org](mailto:agentk@grfn.org)

**THIS COULD BE YOUR LAST WARNING**

## THE ARTISTS' PAYOFF

From this technology will be the ability to create total environments -- fully integrated, multi-sensory experiences that won't be just simulation and imagery (such as visual and tactile VR), but real things and real worlds with a modicum of consciousness that can interact and be, change, and make of reality whatever the user desires.

Within the building blocks of these worlds, I believe there must be some organizing principles (like tone scales in music, molecular lattices in minerals, geometrical growth patterns and proportioning systems in plants, etc.)... otherwise the objects and environments that are created will be incoherent at the core and thus internally unstable and most likely sensorially unpleasant.

The creations of great organizing systems and modules as the seeds of what the molecular replicators will build will be the great future challenge for architects and environmental artists.

Fred Stitt  
The San Francisco Institute of Architecture  
Box 749  
Orinda, CA 94563  
510-299-1325  
e-mail: FSGL@aol.com

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## evolutionary architecture & extropian consciousness

We will live in an age in which our buildings are grown rather than built.

They'll react actively to resist damaging forces such as weather, fire, and earthquakes.

Some will float; some will fly; some will be grown beneath the sea.

Some will be on other planets and some will be starships.

Some will be permeated with sensory devices and biorobots; every component will anticipate and respond to human direction.

All these buildings will maintain a degree of conscious intelligence and the ability to quickly adapt and change in whole or in part.

This new architecture will be the inevitable result of technical competence, particularly in biotechnology and nanotechnology. Much of it doesn't have to wait for the more far-reaching technologies; much of it is achievable today.

But if the design of these buildings is left in the hands of today's architectural elite, there will be no aesthetic competence.

The buildings born of brilliant technology will be lifeless lumps, neither inspired nor inspiring.

In terms of enhancing human life, they'll be better left unborn.

There is a choice.....

EXCERPT FROM ARTICLE IN **EXTROPY** #14 (7:1)

FIRST QUARTER 1995

All events and exhibits are in the San Francisco Bay Area except where noted. List your event or exhibit here. Send to Ylem Newsletter Items address on back page.

Some calendar items are reprinted from Art Calendar (the monthly marketing and career management journal for artists, PO Box 199, Upper Fairmount, MD 21867. Subscriptions, \$32 p. year), I/O (NYC SIGGRAPH), Leonardo Electronic Almanac, and FineArts Forum Online (paul\_brown@siggraph.org). We cannot verify all information sent to us. Readers, inform us of incorrect information, please.

**Events**

**MARCH 3-4**

**REALMEDIA CONFERENCE**  
Attendees will be first to learn from industry leaders about streaming media on the Internet. Held in San Francisco. Presenters: Rob Glaser, Marc Andreessen of Netscape, Mike Slade of Starwave, Jim Banister of Warner Bros., Steve Rennie of Epic/Sony, Mark Cuban of AudioNet, reps from the RealMedia Partners. Info: Aurika Hays, Progressive Networks, [aurika@prognetwork.com](mailto:aurika@prognetwork.com)

**MARCH 14, 8 PM**

**CHAMBER ELECTRONICS**  
BY MARK TRAYLE AND RON KIUVELA  
Live electroacoustic music by two leading artists in the genre.  
Art Gallery, Mills College, 5000 MacArthur Blvd., Oakland, CA 94613

**APRIL 3-7**

**REPRESENTATION IN SCIENCE, ART, AND LITERATURE**  
Held at The University of Texas at Austin. An interdisciplinary symposium/workshop. Plenary addresses by historian and critic W. J. T. Mitchell and by Nobel Laureate Ilya Prigogine. Five panels will bring together scholars from the fields of history of science, art, and literature to investigate practices of representation in scientific texts and illustrations and in literary and artistic images during the late 19th and 20th centuries. Fascinating topics like "Ether and Electromagnetism: Capturing the Invisible." Also browse their "Energy to Information" website. Linda Henderson, Department of Art and Art History, University of Texas, Austin, TX 78712-1104; [nrgy2inf@ccwf.cc.utexas.edu](mailto:nrgy2inf@ccwf.cc.utexas.edu) <http://www.ar.utexas.edu/centrifuge/e2i.html>

**APRIL 10, 6:30-9:30**

**DIGITAL MEDIA: ART AND TECHNOLOGY**  
What's happened to the way we communicate? Tamiko Thiel and Rebeca Bollinger use electronic media to examine how we define both ourselves and our space in the presence of digital technologies. Space is limited. Call to reserve a seat. Bay Area Video Coalition, 2727 Mariposa St., 2nd Floor, San Francisco, CA 94110; 415-861-3282; [videonet@aol.com](mailto:videonet@aol.com); <http://www.bavc.org>

**YLEM'S VERY NEWEST WEBSITE ADDRESS**

We got our domain name changed so that a search on Ylem would reach us.  
<http://www.ylem.org>

**BOUNDARIES: IT ALL HAPPENS AT THE EDGE**

Come explore this idea of boundaries. Probe into doors, windows, and sunglasses as the boundaries we use in everyday life. See that boundaries define life and create identity. Learn how culture, politics, and topography can literally mark and demarcate the earth. Investigate animal territories, borders, and sanctuaries.

**The Exploratorium, 3601 Lyon St., San Francisco, CA 94123; 415-563-7337**

**THROUGH MARCH 2**

**RARA AVIS**

An interactive networked telepresence installation by Ylem member **Eduardo Kac**, at the Archer M. Huntington Art Gallery, University of Texas at Austin, and on the Internet. Kac's interactive telepresence aviary plays with the boundaries between material and immaterial presence, live birds and robotics, isolation and connectivity, VR and Art. To see live Web uploads, go to <http://128.83.58.140/Raravisoft/index.html>. To participate in the interactive component of the show, connect to the Rara Avis Reflector with CU-SeeMe and/or Enhanced CU-SeeMe. The IP address is 128.83.58.142. More on works by Kac at: <http://www.uky.edu/FineArts/Art/kac/kachome.html>

**THROUGH MARCH 16**

Sound Artist Paul DeMarinis, The Music Department and the Art Gallery present a new interactive installation by Paul DeMarinis whose works combine brilliant technical innovation with a strikingly original aesthetic. Reception in the Art Gallery preceding the March 14 concert.

Art Gallery, Mills College, 5000 MacArthur Blvd., Oakland, CA 94613

**APRIL 23**

**PORTABLE EFFECTS**

An interactive prototype installation. Artist-in-residence Rachel Strickland lets you explore the notion that everybody is a designer of what they carry in everyday life. *Portable Effects* uses interactive multimedia to take you step by step through a personal process that offers glimpses into human mobility and what our mobile nature means in terms of what we need with us as we're moving around. Strickland presents a lecture/demonstration on *Portable Effects* at the McBean Theater. The Exploratorium, 3601 Lyon St., San Francisco, CA 94123; 415-563-7337; <http://www.exploratorium.edu>

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**Needs & Offerings**

**MAY 1**

**CACOPHONY DRIVE-IN MOVIE SHORT FILM VIDEO FESTIVAL**  
The Third Annual Brainwash Movie Festival. Works must be original and less than 13 minutes in length. Entries must be transferred to VHS or 16mm. Winners receive free admission to the festival event, prizes, plus a deal to send a collection of the best entries with permission, to programmers at major broadcast venues. Special offer for Ylem Newsletter readers-**no entry fee** if you enclose the newsletter logo. Shelby Toland, PO Box 881911, San Francisco, CA 94188

MARCH 11-14

**THE SEVENTH CONFERENCE ON  
COMPUTERS, FREEDOM, AND  
PRIVACY**

This year's theme: Commerce and Community. Sessions include: The Constitution in Cyberspace, Intellectual Property Rights on the Net, The Communications Decency Act-A Preview of the Supreme Court Argument, The Coming Collapse of the Net, Rights in Avatar Cyberspace, and Virtual Communities.

Held at the Marriott Hotel in Burlingame, CA

**ACTUALIZING THE VIRTUAL**

From 1992 to 1996, the Revue virtuelle at the Musée national d'art moderne, Centre Georges Pompidou, held talks and exhibits on interactive information technology, from computer-generated images and virtual reality to hypermedia and networks. Now available on the

⑦ CD-ROM, *Actualizing the Virtual*, includes

texts of 25 talks, 150 interactive video sequences, 80 excerpts from interviews with artists and speakers.

Sales: Centre Georges Pompidou, Administrations des ventes, 75191 Paris cedex 04, France; tel (33-1) 44 78 40 70; fax (33-1) 44 78 12 05; [revue-virtuelle@cnac-gp.fr](mailto:revue-virtuelle@cnac-gp.fr)

**AEIOU.2 GUIDE**

That is, Alternative Exhibition Information of the Universe, updated and published by the Film Arts Foundation. Provides descriptions and submission information on over 220 alternative exhibition venues regularly exhibiting challenging alternative independent film and video throughout the United States and the world. For a copy, send an addressed mailing label and \$7 to:

**AEIOU.2, Film Arts  
Foundation, 346 9th St., 2nd  
Fl., San Francisco, CA 94103**

**AMERICANS FOR THE ARTS**

A merger was announced in September between the American Council for the Arts (ACA), A research, advocacy and information services organization, and the National Assembly of Local Arts Agencies (NALAA), the country's largest alliance of community arts groups. The new entity plans to influence cultural policy, identify critical issues for policy and research, shore up arts funding, and promote grass-roots strategy for arts advocacy. Contact:

**Americans for the Arts at: 1 E. 53rd St., New York, NY 10022; 212-223-2787; <http://www.artsusa.org>**

**ARTIST LEGACY PROJECT**

Started to help relatives of artists who were dying of AIDS, this project has developed information to any artist interested in protecting his/her intellectual property in years to come using trusts and copyrights. For how-to information, contact:

**Volunteer Lawyers for the Arts, 1 E. 53rd St., New York, NY; 212-319-2910**

**ARTISTRY**

The 4-color how-to Fractal Design Painter Software newsletter features images by working Painter illustrators, artists and web designers and easy-to-understand steps showing how they created their work. \$49.95/1 year (10 issues); additional foreign postage: Canada add \$18/year; overseas surface add \$22/year.

**Credit card subs: 818-878-0853; fax -0856; [karen239@aol.com](mailto:karen239@aol.com); checks or money orders: Artistry, PO Box 8895, Calabasas, CA 91372-8895**

**ARTNETWORK YELLOW PAGES**

Lists over 3000 resources that help artists with every facet of producing artwork-from the studio to the marketplace, book-keeping to the IRS. Includes critics, printers and what they print, accountants, businesses and lawyers that offer career advice, grant writers, grants givers, residencies, retreats, colonies, art supply catalogs, art organizations and exhibition spaces, art magazines, specialty magazines, regional directories, reference books, art and business book publishers, art book clubs, framers, insurance companies, packers and movers, consulting companies, auction houses, slide duplicators and much more. Send \$12.95 plus \$1.25 shipping (CA residents and .94) or call to order with charge card.

**ArtNetwork, PO Box 1268, Penn Valley, CA 95946; 916-432-7630**

**ARTSCAPE**

An online resource for artists and art lovers. "Our chief goal is bringing contemporary art to the public in a manner which is accessible as well as educational. We believe the more a person knows about the life behind the work, the more they can come to appreciate it. Thus, ArtScape has a decidedly educational bent."

**<http://www.artscape.com>**

**BAY AREA VIDEO COALITION  
WORKSHOPS**

BAVC offers a comprehensive year-round schedule of 200 workshops and seminars. Participants receive hands-on access to professional and state-of-the-art equipment. Classes in March and April include: Photoshop for Mediamakers, Creating a Web Site, Making Art for the Web, and Making Video Art.

**Bay Area Video Coalition,  
2727 Mariposa St., 2nd Floor,  
San Francisco, CA 94110; 415-861-3282**

**BOTS: THE ORIGIN OF NEW  
SPECIES,**

by Andrew Leonard (Wired Books, San Francisco) ISBN 1-888869-05-4, \$21.95. Available in February. A "bot"-short for robot-is a tiny computer program designed to accomplish specific tasks on the Net like spellchecking or searching for information. Is cyberspace the new primordial ooze in which out-of-control bots are mutating, multiplying, and engaging in a near-Darwinian struggle to survive? Where is this escalation heading? Corporate-raiding bots? Nazi bots?

**CALIFORNIA COLLEGE OF ARTS  
AND CRAFTS**

Responding to rising enrollment and increased emphasis on integrating disciplines, CCAC has opened a permanent San Francisco campus to permanently house the Schools of Architectural Studies and Design. The School of Design offers specialization in fashion design, graphic design, industrial design and illustration. **California College of Arts & Crafts, 450 Irwin St., San Francisco, CA; 800-477-1-ART**

**CENTER FOR SAFETY IN THE ARTS**

Publishes Art Hazards News, a quarterly 8-page newsletter. The Center's mission is to inform visual artists, performers, teachers, students and others about arts workplace safety and arts-related health hazards. Subscription to the newsletter is \$24 per year. Contact: **Center for Safety in the Arts, 2124 Broadway, PO Box 310, New York, NY 10023; <http://artswire.org/70/1/csa>**



### CTHEORY

An international review of theory, technology and culture. Sponsored by the Canadian Journal of Political and Social Theory, articles and key book reviews in contemporary discourse are published weekly as well as theorizations of major "event-scenes" in the mediascape. CTHEORY includes interactive discussions among its subscribers.  
<http://www.freedonia.com/ctheory/>

### CUPLE

The Comprehensive Unified Physics Learning Environment. A CD-ROM-based multimedia platform that combines a variety of applications and instructional materials into an interactive environment for teaching and learning introductory physics. CUPLE's multimedia foundation uses a unique system manager that keeps track of all the hyperlinks so critical to this interactive environment. This makes it simple to explore a topic like kinematics. CUPLE operates on a 486-based CPU or better running Windows 3.1 or later with at least 8 MB RAM and a CD-ROM drive for installation. Bruce Shriver, North Carolina State University, Department of Physics, Raleigh, NC 27695-8202; 516-576-2483; -2374; bshriv-er@aip.org

### FROM FINLAND

One of the best CD-ROMs so far, for both its content, visuals, interface, and graphic design, has been published in Helsinki, Finland: "Ambitious Bitch-a Multimedia Dive into Femininity," by media artist Marita Liulia.  
<http://www.edita.fi/bitch>

### INTUITION

A magazine for the higher potential of the mind. Intuition magazine consists of articles, profiles, and interviews on topics relevant to the development and application of intuition and creativity. Introductory price: \$15.95 per year.  
*Intuition Magazine*, PO Box 460773, San Francisco, CA 94146-9804

### MARCH

**IT'S A COMET AND IT'S BLAZING**  
During March, Comet Hale Boop is expected to be a dazzling, viewable sight in the early evening sky. Special programs are planned with planetariums and museums in other parts of the world to share the historic event. The Tech will offer visitors opportunities to learn more about the comet, first noticed in 1995.  
**The Tech Museum of Innovation**, 145 W. San Carlos St., San Jose, CA; 408-279-7150

### MASTERPAK ARCHIVAL MATERIALS CATALOG

The finest wrapping, packing and storage products available. Masterpak, PO Box 1465, Long Island City, NY 11101-9998; 718-937-6330; fax -6413; 800-922-5522

### NEW INTERACTIVE ARTWORK ON CD-ROM

Roz Dimon has just published the CD-ROM "Information Woman," created completely on computer. "Information Woman" is about the inner thoughts of a woman. When you play this piece, her thoughts and feelings grow as you watch the painting evolve. The music and visuals are very captivating. This CD-ROM also has an interactive artwork entitled "The Worlds Greatest Bar Chart," a spoof on mankind's insatiable need to measure everything.

Dimon Arts, Inc.,  
2 Charlton St., New York, NY 10014-4916;  
212-645-3608; fax -3607;  
[rozdimon@interport.net](mailto:rozdimon@interport.net);  
<http://www.users.interport.net/~rozdimon>

**NOTNOTESNOTRHYTHMS**  
**VIRTUAL REALITY FOR THE EAR**  
Composer Henry Gwiazda premieres first-ever virtual audio music on innova compact disc. He creates a sphere of sound ranging from the ground to high above you, around both sides and in some cases, the sound can appear to come from behind you.  
**Homer Lambrecht**,  
**American Composers Forum**;  
612-228-1407; fax 291-7978;  
[compfrm@maroon.tc.umn.edu](mailto:compfrm@maroon.tc.umn.edu)

### RADICAL CONFERENCE CD-ROM

The proceedings of the RADical International Research Conference in Art and Design, held at Gray's School of Art, Aberdeen, in September 1994, are probably the first of their kind in this field to be published in electronic format. Emphasis: academic theory and practice. £49.50 postpaid.  
**Kepplestone**, Queen's Rd., Aberdeen, AB15 4PH, UK; tel 01224 263320; fax 01224 263323; [v.mackinlay@rgu.ac.uk](mailto:v.mackinlay@rgu.ac.uk); <http://www.rgu.ac.uk>

### THE CENTER FOR FRONTIER SCIENCES

Established in 1987 to coordinate globally information exchange, networking, and education on frontier issues of science, medicine, and technology. The Center helps engender greater openness to novel scientific claims in several areas including bioelectromagnetics, the mind-matter interrelationship, complementary

medicine, and new energy technology. Members receive *Frontier Perspectives*, a journal published by the Center, and invitations to events.  
**The Center for Frontier Sciences**, Temple University, Ritter Hall 003-00; Philadelphia, PA 19122; 215-204-8487; fax -5553; [v2058@vm.temple.edu](mailto:v2058@vm.temple.edu); <http://www.temple.edu/CFS>

**THE HIDDEN HEART OF THE COSMOS**  
**HUMANITY & THE NEW STORY**  
by Brian Swimme. Highly recommended as an easy introduction to modern cosmology, how we can learn how to *feel* where we are in the Milky Way, and *why* we study all this.  
**Orbis**, Maryknoll, NY 10545; \$15; ISBN 1-57075-058-0

**THE SAN FRANCISCO INSTITUTE OF ARCHITECTURE**  
Founded by Ylem member **Fred A. Stitt** as a school devoted to innovation in design and experimental research and reform in architectural education. Classes are open to graduate students, architectural employees, practicing professionals, and those who have yet to start their architectural education.  
**SFIA Information Office**, Box 749, Orinda, CA 94563; 510-299-1325; fax -0181; [sfia@aol.com](mailto:sfia@aol.com)

### UI-DESIGN WEB

The 2nd edition (January 1996) of **UI-DESIGN Web** (formerly known as **UIWORLD**). The specialist site for multimedia and interaction design professionals is now available at:  
<http://www.io.tudelft.nl/uide-sign>; Raghu Kolli, Editor  
[uidesign@io.tudelft.nl](mailto:uidesign@io.tudelft.nl)

## Opportunities

### YLEM AND INCOME TAX

There are two ways you may deduct Ylem items on your income tax: If you file a Schedule C for business, membership dues are deductible there. If you gave a donation (or donations) above and beyond your dues, these are charitable contributions, because Ylem is a non-profit organization.

### DEADLINE: ASAP

#### FINNISH EXHIBIT SEEKS SOLAR ARTISTS

For May-June exhibit at Rauma Art Museum in Rauma, Finland. The main theme of this electronic art exhibition is solar energy/solar art. Themes: sun and its light, its energy and life-giving force, but also the concept of energy of light in artistic, ecologic, mythologic, technic, poetic, magical, scientific senses; solar energy as

power source for electronic art. Also technology as means of living closer to the nature. Art that is not strictly technological on these themes also eligible.

Janne Koski,  
Rauma Art Museum,  
tel = +358 2 8224346;  
fax + 358 2 8222183;  
janne.koski@korpi.pp.fi

#### 30 YEARS OF LEONARDO: CALL FOR TEXTS

In celebration of its 30th year of publication, *Leonardo* wishes to focus on two themes throughout the 1997 volume: Artists' writings and Art and Genetics/Art and the New Biologies. Articles by artists, theorists and historians investigating aspects of genetics, genesis of form, etc. are sought. Submit to:

Roy Ascott;  
100143.100@compuserv.  
com

### CORVALLIS ARTS CENTER

Reviewing proposals for 1998. "Shows with specific themes could include: cultural diversity, technology." No film/video. 1,100 sq. ft., 140' wall space. Postmark deadline.

Corvallis Arts Center,  
Exhibition Committee, 700  
S.W. Madison, Corvallis, OR  
97333; 541-754-1551

#### TECHNICAL COMMITTEE ON GRAPHICS RECOGNITION (NANCY, FRANCE)

2-day workshop, August 22-23, on methods and systems for graphics recognition. Participants contribute actively to the workshop, either by presenting a full state-of-the-art paper, or through an abstract. Contact:

Karl Tombre,  
tel +33 3 83 59 20 71;  
fax +33 3 83 27 83 19;  
tombre@loria.fr

THAW 97: CALL FOR ENTRIES  
Festival of alternative film, video and digitally produced moving images. Thaw implies emergence, movement and a loosening of the rigidity that often locks the artistic moving image into preconceived categories. Amateurs, professionals and students encouraged to submit. Cash prizes offered. Contact:

University of Iowa; 319-335-5402; thaw97@uiowa.edu;  
http://www.uiowa.edu/thaw

WRIGHT STATE UNIVERSITY  
Art galleries currently reviewing proposals for 3-D artwork and sculptural or mixed-media installations for 1998-99 season. All 3-D media incl. electronic, computer and multimedia installations. Send cover letter describing proposal and the artwork, available dates, budget estimate, 10+ slides, resume, SASE to:

Craig Martin, Gallery Coordinator, WSU Art Galleries, A 128 Creative Arts Center, 3640 Col. Glenn Hwy., Dayton, OH 45435; 937-775-2978; fax -4082

### DEADLINE MARCH 31

#### ALUMINUM

Sheen of silver, weight of air. Unique and production sculptural and functional objects made of aluminum, being curated by Lloyd Herman for Museum of History and Industry in Seattle show Feb. 1-June 30, 1998, and national tour. Send slides and info on available work, SASE to: Aluminum, MOHAI, 2700 24th Ave. East, Seattle, WA 98112; 206-789-6405

### DEADLINE APRIL 1

#### FIFTH ANNUAL NEW YORK DIGITAL SALON 1997

Exhibition of Computer Artworks. No entry fee. For prospectus send SASE to: Timothy Binkley, Digital Salon, School of Visual Arts, 209 E. 23rd St., New York NY 10010; 212-592-2535; fax -2509; kirsten@sva.edu

### DEADLINE APRIL 1

#### STATION-INDEPENDENT PARTNERSHIP PRODUCTION FUND

Call for proposals from independent producers in partnership with local public television stations to create programming that expands the dialogue among our nation's various communities and cultures. Up to \$50,000 available per project.

Independent Television Service, 190 5th St. E., Suite 200, St. Paul, MN 55101

### ARTVILLE

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### NEW LANGTON ARTS

Proposals for solo, 2-person, and group shows of work in the visual arts, performance, media arts, literature, and music, and interdisciplinary projects. Works presented at NLA cross disciplines and challenge traditional formats, center on critical contemporary issues, and/or are collaborative or community-based. It welcomes work with few funding sources elsewhere, and work just beginning to find its audience. Artists are provided an honorarium, production funds, and professional technical and administrative support. Media arts: send CD-ROM, floppy, or video. Performance: Send videos. Prospectus: send SASE to:  
New Langton Arts, 1246 Folsom St., San Francisco, CA 94103; 415-626-5416; fax 255-1453

# NANOPLASTICS

## How "Intelligent" Materials May Change Our Homes

Picture, if you will, a chair that automatically adjusts its shape and temperature for each user, walls that change color and texture at your whim, and a display screen where objects come out of its flat surface and toward you.

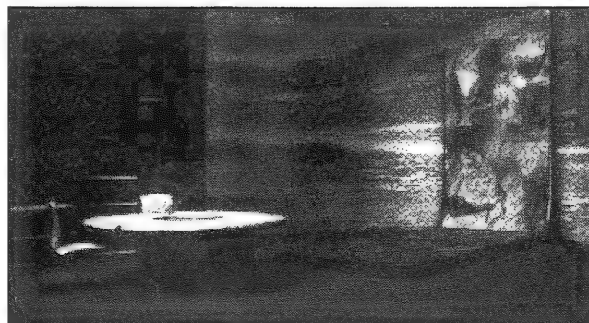
No, it's not ~~the house~~. It's nanoplastics -- the theoretical fusion of traditional plastics and the developing field of nanotechnology, in which microscopic machines and other objects are constructed atom by atom.

The hypothetical field of nanoplastics represents a new conceptual landscape for product design in the home -- one in which the home of tomorrow is a system of truly intelligent, adaptive, self-organizing products. Charles Owen, a professor of product design and the director of the Design Processes Laboratory at the Illinois Institute of Technology, along with a team of graduate and undergraduate design students, has come up with some hypothetical applications for nanoplastics in the home of the future.

Utilizing a Silicon Graphics workstation and ~~the~~ software, Owen and his students have created some computer-generated representations of possible nanoplastic products.

The potential of such hypothetical nanoplastic products is amazing. Computers the size of a blood cell would be contained within nanoplastic materials, giving objects enormous processing power ("intelligence"). Sensors and emitters would be constructed to absorb and transmit pressure, sound, and nearly the entire electromagnetic spectrum. These would provide nanoplastic materials with the ability to sense their surroundings and to respond with physical change or the transmission of sound, light, heat or other emissions.

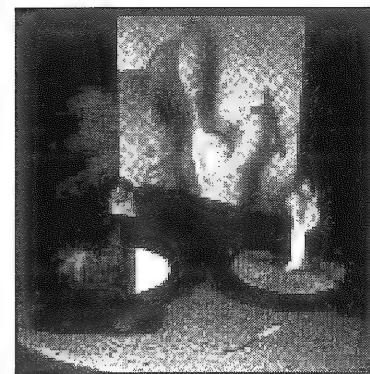
Here are some potential elements of the nanoplastic household:



THE EXPLORE ROOM

An interactive, multisensory media center, this room is used primarily as an educational environment. However, it can also function as an exercise area, entertainment room, or general work space. Some of its ele-

Editor's note: This is excerpted with permission. For the full article, please see the Futurist, January-February 1995, 50-53.



THE SCULPTOR

ments include:

This is a device that uses nanoassemblers to construct physical objects out of a substance known as Nanoclay, a thin-walled shell of nanoplastic capable of rapidly changing form. Objects can be created by manipulating the clay by hand or with a special tool for finer detail. For example, as the tool is passed near the clay, corners can be sharpened, and the opacity and materials characteristics of it changed. As the Nanoclay object

is being formed manually, its three-dimensional image can be holographically projected nearby, changing simultaneously with the actual object.

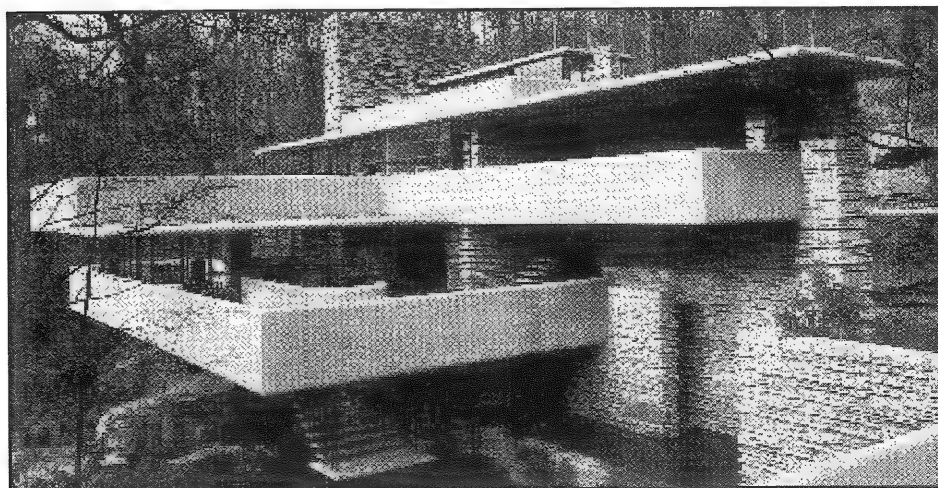
# The Invisible Cantilever

*An Installation*  
by Karl Bohringer and Ken Goldberg

"Although the senses occasionally mislead us respecting minute objects, such as are so far removed from us as to be beyond the reach of close observation, there are yet many other of their informations, the truth of which it is manifestly impossible to doubt; as for example, that I am in this place, seated by the fire, clothed in a winter dressing gown, and that I hold in my hands this piece of paper..." Descartes, *Meditations*.

A 1/I millionth scale version of Frank Lloyd Wright's Fallingwater, invisible to the naked eye.

This project considers the distance between the viewer and what is being viewed. How does technology alter our perceptions of distance, scale, and structure? Technologies for viewing continue to evolve, from the camera obscura to the telescope to the atomic force microscope; each new technology raises questions about what is real versus what is an artifact of the viewing process. For example, how does the framed vision of the microscope differ from the framing induced by the World Wide Web? Discontinuities induced by these media can undermine what Husserl calls the "inner" and "outer" horizons of experience. These horizons are vital to architecture and to what we might call "telepistemology:" the study of how viewing at a distance influences belief, truth, and perception.



FRANK LLOYD WRIGHT'S FALLINGWATER

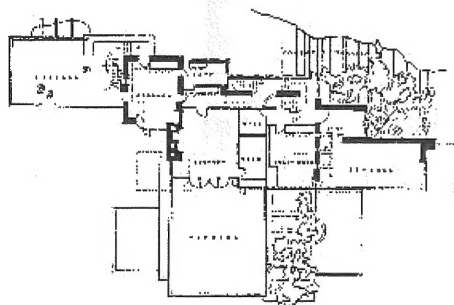
Editor's note: This is at the micron level rather than nano but I believe it is a good indication of current art directions.



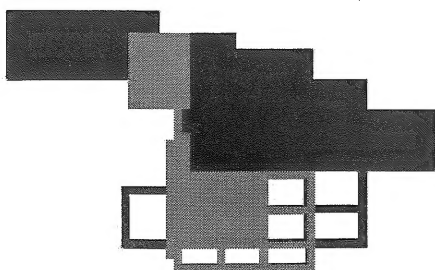
## Why Fallingwater?

In 1991, a poll of architects taken by Architectural Record found Fallingwater to be the single most important building of the last 100 years. To reflect features on the site, Wright employed the cantilever: a horizontal structure for distributing force, "the true earth-line of human life" (Wright).

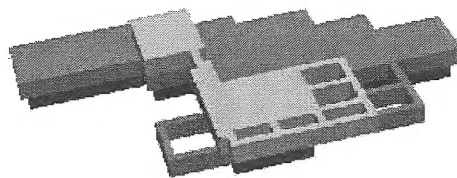
Cantilevers are also used to measure forces in Micro Electro Mechanical Systems (MEMS): miniature devices etched from silicon. Examples of current research can be found at many labs, including UC Berkeley, Cornell and UCLA. For example, many automotive air bags measure the deflection of a MEMS can-



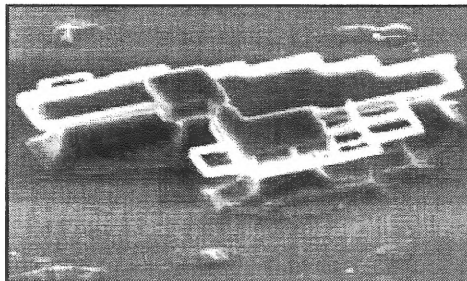
FRANK LLOYD WRIGHT'S FLOORPLAN.



CAD MODEL.



CAD MODEL.



.1 MM (WIDTH OF A HUMAN HAIR).

tilever to detect collisions.

The installation includes an optical microscope, halogen lamps, and a copy of Descartes' *Meditations*. For more information:

- *Real World*. 16 Jan-I Mar 1997:  
New Langton Arts, 1246 Folsom St.,  
San Francisco, CA 94103. (415) 626-  
5416. Jan 16, 7:00 pm: Opening. Feb.  
4, 7:30 pm: Panel on Scale and  
Structure with Daniel B-H. Lieber-  
mann (student of Wright), Kris  
Pister, and Glen Seator.

- *Vision and Visuality*. Hal Foster, ed.  
Bay Press, 1988.

- *Technology and the Politics of  
Knowledge*. Andrew Feenberg, ed.

Oxford University Press, 1996.

- Ken Goldberg and Sue Spaid.  
*Telepistemology*. WiReD, 4(12),  
page 232. December 1996.
- Rupert Jenkins. *Witness: The  
Invisible Cantilever*. West Magazine.  
page 16. Winter 1997.
- Peter Wayner. *8 Rooms, 4 Baths,  
No Vu*. "New York Times Sunday  
Magazine, page 21. March 10, 1996.
- <http://telegarden.aec.at>
- [http://www.ieor.berkeley.edu/~  
goldberg/flw/print.html](http://www.ieor.berkeley.edu/~goldberg/flw/print.html)
- Or contact Ken Goldberg at  
[goldberg@ieor.berkeley.edu](mailto:goldberg@ieor.berkeley.edu).

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Sant, Lorelei Stewart, and Peter Wayner.

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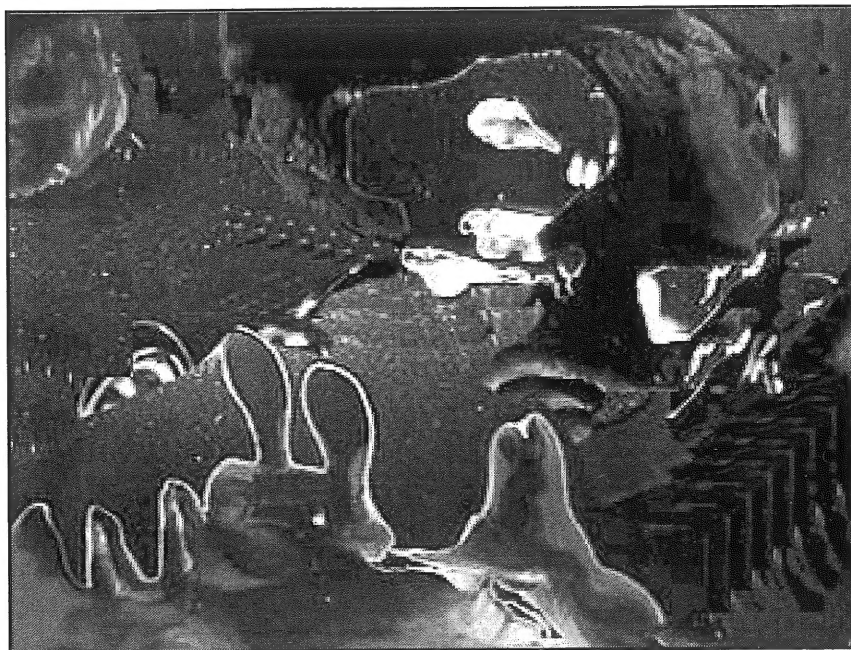
URL:

<http://www.nanothinc.com/>

NanoWorld/NanoGallery/

AlexaSmith/Biography.html

What happens when you can control matter itself? I became interested in this idea about 3 years ago and have since concentrated my art on nanotechnology. I believe that nanotechnology will have a major impact on all areas of our society, but particularly in the areas of computing, medicine and space. With a lifetime interest in space exploration, I have focused my art on this area. With the current launchings to Mars and beyond, we are entering a new space age and I expect it to accelerate greatly once nanotechnology arrives.



NANO FUTURE SPACE © 1996 ALEXA R.W. SMITH

My latest series shows possible manipulations of nature via nanotechnology in space and on other worlds. This includes such ideas as terraforming, asteroid mining, bio-mechanical construction, diamandoid structures, and others which haven't been thought of yet.

I hope you have enjoyed this issue and I welcome any comments!

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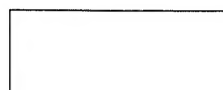
16

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is an international

n., pronounced

eye-lum, 1. is a Greek word

for the exploding mass

from which the

universe emerged

organization of artists, scientists, authors, curators, educators, and  
art enthusiasts who explore the intersection of the arts and sciences.  
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